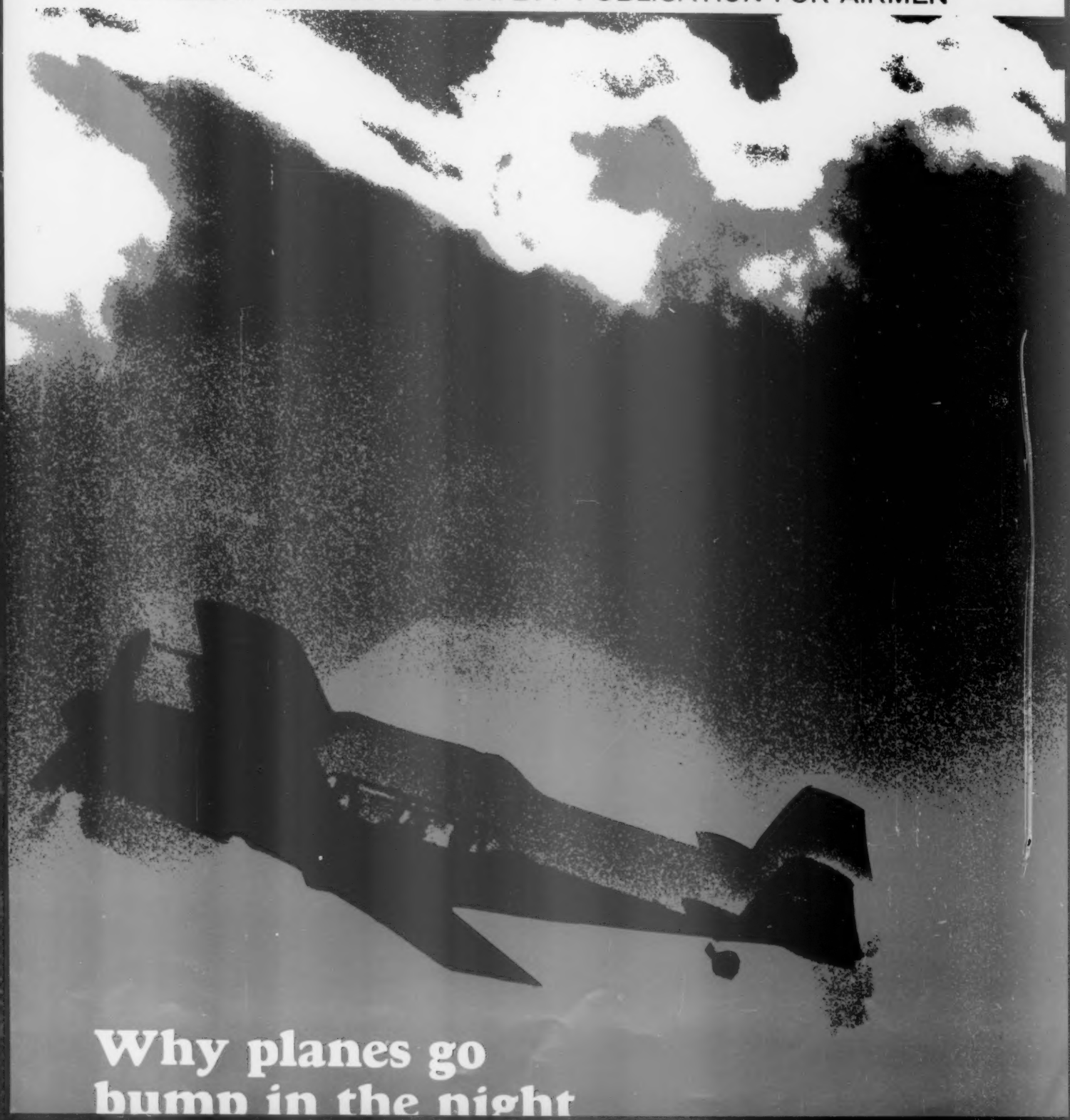
FAA GENERAL AVIATION NEWS

APRIL 1978

A FLIGHT STANDARDS SAFETY PUBLICATION FOR AIRMEN



Why planes go bump in the night

FAA GENERAL AVIATION NEWS

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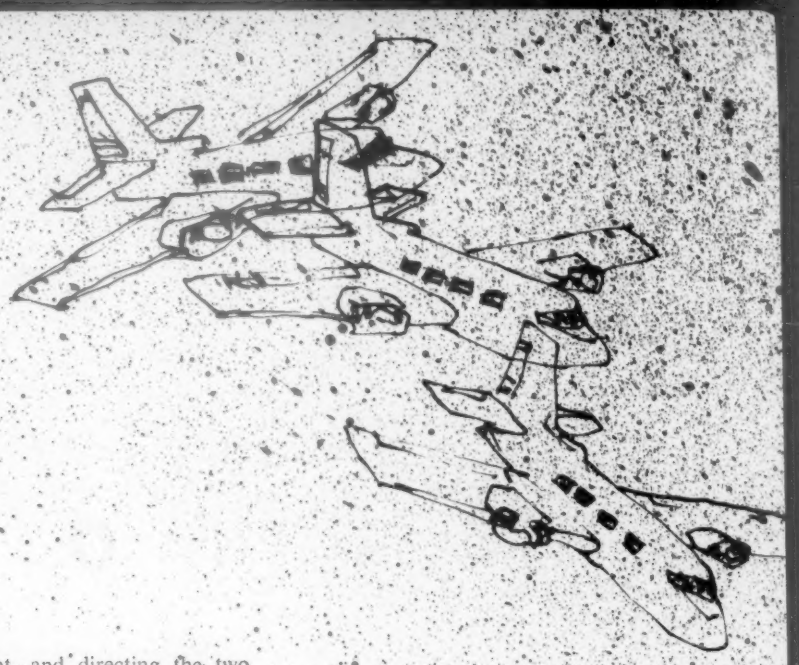
Night Flight



The huge L-1011 jetliner with 163 passengers on board, was in the landing pattern at Miami International Airport when the flight crew observed that one green light (indicating the nosewheel was down and locked) had not come on. The aircraft was vectored away from the airport to the northwest at an assigned altitude of 2,000 feet while the crew attempted to determine whether they had a wheel mechanism failure or simply a light bulb failure. The next four minutes has become a classic "horror tale" in aviation circles, via newspaper headlines and the art of the novelist and television dramatist. While the crew was grappling with the problem, the aircraft, after initially being placed on autopilot, somehow was deflected from its intended flightpath and slid imperceptibly toward the ground. A last-second effort by the captain to pull up failed and the aircraft crashed with a devastating impact into a northern corner of the Florida Everglades. Ninety-four passengers and four crewmembers died. The date was December 29, 1972. The time was eighteen minutes before midnight.

In the six years that have elapsed since this accident, important improvements have been made in ground and cockpit instrumentation for alerting pilots when an aircraft of this type is dangerously close to the ground. However, the lessons that could be learned from this catastrophe—which was well documented thanks to surviving cockpit voice and flight recorder tapes, and a painstaking investigation by the National Transportation Safety Board—are still applicable to the general aviation pilot, who usually flies without the protection of sophisticated ground/proximity warning devices, and who often flies alone.

The degree to which a cockpit distraction can absorb the attention of a flight crew can be seen in the fact that there were four persons in the cockpit at the time when the problem surfaced (including the captain), and yet none of these—according to the findings of the Safety Board—observed the loss of altitude or heard the aural alert which sounded as the airplane descended through 1,750 feet. The captain's attention was said to have been divided between assisting the first officer to remove and replace the nosegear warning light, and directing the two other crewmembers who were attempting to make a visual sighting of the nosegear from the foreward electronics bay.

The probable cause of the accident as determined by the Board was ". . . the failure of the flight crew to monitor the flight instruments during the final four minutes of flight, and to detect an unexpected descent soon enough to prevent contact with the ground." Failure of the landing gear warning-and-indicating components was listed as a factor.

One factor which was not stressed was the absence of visual reference to the ground. The hour was late—nearly midnight—and although local weather was described in the NTSB report as ". . . clear with unrestricted visibility . . ." it was also noted that the accident occurred in darkness and there was no moon. The terrain in the impact area was described as flat marshland, covered with soft mud under 6 to 12 inches of water. Elevation at the accident was approximately eight feet above sea level. There was no human habitation for miles in any direction.

In night flying there is no direct connection between the visibility range and visual reference to the ground. On moonless nights the only objects that may be seen from the cockpit are those which are illuminated sufficiently to stand out from the background. If any of the flight crew of the ill-fated L-1011 had glanced out of his windows he would have seen nothing below to warn him that the aircraft was dangerously low.

Many pilots are unaware of how much we depend on visual reference to the ground—even in highly sophisticated aircraft. Through long ingrained habit we have learned to make instant approximate calculations of our elevation above ground by the size of a tree, a building, a person, etc. When the terrain becomes shadowy or indistinct, visual reference is reduced to guesswork—which makes for risky navigation—or dependence upon instruments which must be monitored continuously and maintained in accurate calibration. In a very real sense, night flying is always a form of instrument flight.

The importance of the light factor can be seen in that the great majority of night accidents take place under conditions described as "dark night" (moonless). In 1975, for example, NTSB reported 419 night time accidents, of which 64 occurred under a bright moon, and 355 took place in dark night conditions.

Ordinarily such factors as the amount of moon light are not considered by pilots in flight planning. In fact, many flights that culminate in a night landing so happen only because of a delay enroute. The prospect of arriving at the destination airport an hour or so after sundown may not seem to present any inherent difficulties, as long as weather and visibility remain good. But for the inexperienced, non-IFR rated pilot, the abrupt loss of visual clues in flight can lead to disorientation and loss of control.

Desert Dilemma

This is apparently what happened to the pilot of an American *Yankee* last December on a VFR flight from Los Angeles to Las Vegas. Twenty miles out of the desert city, the pilot was over the southern portion of the Spring Mountain range at 9,500 feet when he began his let down for the approach to McCarran Airport. He was flying on the Las Vegas VOR in clear skies with visibility unrestricted. The late afternoon sun had already dipped below the horizon, but the desert was still lighted by the afterglow and the brilliant lights of the city. According to the statement of the surviving passenger, as the nose of the aircraft dipped, the glow of light over the desert sky was "extinguished" by the shadow of the mountain peak ahead

From the air at night the 1.5 million acre Everglades swamp offers little visual reference.

and the contours of the surrounding terrain suddenly became indistinct. The pilot, apparently disoriented, initiated a turn which progressively steepened. The aircraft stalled and crashed into the mountainside, killing the pilot and one passenger; a second passenger survived with injuries.

Human beings are not blessed with instant visual adaptation to the dark. Almost everyone has had the experience of walking into a darkened movie house and having difficulty identifying people in nearby seats for the first few minutes. Human eyes require at least eight to ten minutes to achieve a significant degree of dark adaptation. At dusk a rapid descent from altitude where the sun is still visible down to an airport already in shadow, can reduce the light level faster than some individual's eyes can accommodate to the change. The pilot may have difficulty in reading his panel instruments, as well as in picking out terrain features.

Attempting to land after dark at an unlighted strip or airport is a frequent cause of night accidents. No matter how familiar the field may be to the pilot, he cannot "feel" his way to a landing in the absence of visual clues—as the pilot of a Piper PA-22 *Tripacer* discovered during an August flight to Bullfrog Basin Airport in the Glen Canyon National Recreation Area, in southern Utah.

Shortly after departing from Provo, Utah, with two passengers on board, the pilot encountered a large thunderstorm (not forecast) and altered his route to avoid the weather. Consequently he arrived at Bullfrog half an hour later than anticipated, at approximately 9:00 p.m. The waning light was obscured by the fringe of the storm as he attempted to line up with the runway for a landing to the south.

The field was unlighted, except for the headlights of a car, which a friend, who had come to pick up the pilot, positioned near the threshold. Since the surrounding hilly terrain was already lost in darkness, the pilot attempted a steep approach, which brought him over the runway at midfield—the landing was aborted. On a second attempt the airspeed was excessive, resulting in another go-around. On the downwind leg for his third attempt, the pilot apparently strayed out of the pattern, and his landing lights picked up the outline of a hillside directly ahead. He cut the engine and landed straight ahead, bringing the aircraft to a stop after considerable damage. Luckily he and his passengers escaped with minor cuts and bruises.

Even when the destination airport is well lighted, the pilot who is not used to approaching it after dark may have trouble with his landing or with locating the runway. In some instances pilots have mistakenly landed in the dark at the wrong airport, or on a taxiway, highway, shopping center parking lot, etc.

A recent accident at Bryson City Airport, N.C., involved an experienced, IFR-rated pilot with over 2,000 flight hours. Returning home after a long afternoon's flight, the pilot's arrival at Bryson was delayed by unexpected stiff headwinds, and darkness was falling as he began his approach. During the last two hours of his flight he had flown with a bright sun directly in his eyes—a condition which in itself reduces the rate of dark adaptation. Because of his familiarity with the terrain, he began his approach before having the airport in sight. But he was unable to find the runway in the dark, so he radioed the field on UNICOM and asked that the runway lights be turned on. The airport operator advised him that the runway lights *were* on, and asked the pilot if he couldn't see the airport rotating beacon. *Negative*. But the pilot thought he had the runway lights in sight now, and continued his approach to land.

Descending from 6,500 feet to pattern altitude (2,500 feet) the pilot abruptly discovered that the lights ahead were those of a highway. As he pulled up frantically his right wing grazed a tree, and then his left wing tip clipped a power line. The aircraft crash-landed on the highway, damaging an automobile and injuring the occupants. The pilot and his passengers escaped injury.

Exposure to bright sunglare can reduce night vision (temporarily), especially in conjunction with fatigue. Do not expect good night vision after a day on sunny ski slopes or beaches—unless your eyes have been carefully protected with effective glasses.

Obstructions to aircraft which are no problem in daylight, when they can be readily seen, may become fatal hazards at night when they drop out of sight—and memory—if not illuminated. It comes as a surprise to many pilots to learn that FAA has no authority to require lighting or other marking of ground objects, such as towers, wires, or the like. Anyone planning to construct such an obstruction near an airport (or *anywhere* if the planned height is over 200 feet above the ground) must notify FAA with as much advance notice as possible, and failure to do so may leave one liable to a fine of up to $500 (Federal Aviation Regulation Part 77). This enables the agency to determine whether the structure may interfere with aircraft traffic patterns, and to take appropriate action—which could include altering traffic patterns, or issuing notices to airmen (NOTAMs). However, there is no regulation that requires such structures to be lighted or otherwise be made conspicuous.

The agency has established detailed *standards* for lighting and marking obstructions, and voluntary compliance with these standards on the part of owners has been very good. Nevertheless, the responsibility for knowing about possible obstructions at various altitudes and locations along his flight path rests with the pilot, who should identify them in his flight planning. Lights on remote structures occasionally burn out or are damaged inadvertently and such outages may not be immediately remedied. Any unlighted tall tower a pilot observes should be reported to the nearest FAA flight service station.

Wire Cutting Comanche

A recent accident in southwestern Nevada points up the danger of colliding with unlighted structures during a night approach. The pilot, who was not instrument rated, was flying a Piper *Comanche* accompanied by one passenger. They had departed Brackett Field, at La Verne, Calif., at 6:05 p.m. local time on a cool, clear day in January. Their destination was Searchlight, a small town in Nevada where that state joins California and Arizona, near the Colorado River. The airport is located one mile south of town, along highway 95. The single runway (34-16) is 6,600 feet by 75 feet, and it is lighted from dusk to dawn. There is an upslope gradient to the north, with a rise of 2.35 degrees.

On the night of the accident a highway patrol officer sitting in his parked car near the airport observed an aircraft approach from the south at approximately 7:45 p.m. He noted that only one landing light was on. The airplane flew north directly over the runway at an altitude of about 200 feet AGL, then turned left (westward) and flew south over the highway at approximately 500 feet AGL. A few minutes later, as the same offi-

cer was driving south along the highway he saw a bright flash in the sky ahead. Three miles south of the airport he came upon the wreckage of the *Comanche* in an open field 300 yards east of the road. The airplane was demolished and burned; the two occupants fatally injured.

The NTSB investigation, which found no evidence of mechanical failure or pilot incapacitation contributing to the accident, ascertained that the propeller had struck and severed two high tension cables which traversed the area at a height of 140 feet above the ground. Apparently the pilot had attempted a straight-in shallow approach to land on runway 34, and did not see or know about the cables.

Long shallow approaches are not recommended at night, not only because of the risk of encountering obstructions but also because the farther the pilot is from the lighted areas of the airport, in general, the fewer are the visual clues available to him. Even though the pilot uses his panel instruments carefully to set up his glide, local conditions such as wind shifts could require adjustments to the glide angle or altitude, which would be readily apparent to the eye during the day but not at night. If the pilot's altimeter is not set exactly for local barometric pressure, or if the instrument is reading slightly off the mark, and results in an abnormally low approach, there may be no backup in the form of visual reference to warn him in time to pull up—only darkness. The largest category of night landing accidents involve undershooting the field.

The danger of landing short is increased when you fly at night into a runway with an upslope gradient, or when the city lights seen around and beyond the airport are on rising terrain. In daylight the grade of the runway does not interfere with your maintaining a proper glide angle, but at night the up-tilted lights give you the impression that you are at a higher than normal elevation, leading the unwary pilot to a premature descent and an excessively low final approach. When landing into a *downward* gradient there is a tendency to come in somewhat high and land long, but in these circumstances the pilot has the option of going around—which is not open to him when he finds himself out of altitude before he reaches the runway threshold.

The Deadly Doze

Drowsiness and *fatigue* are two threats to flight safety which lie in wait for the careless pilot at all times, but at night they are particularly dangerous. The absence of visual stimulants, the drone of the engine, the warmth of the heated cockpit, and the natural tendency to seek rest at night are all highly conducive to dozing at the controls—especially when the pilot is flying alone, and for long hours, such as pilots who fly cargo runs at night.

Even pilots heavily experienced in night flying have been victimized. Complete statistics are not available, for lack of certain evidence, but in a number of night accidents investigators have found that the pilot simply fell asleep at the controls. For example, in 1972 a pilot who had completed a long day's work in Pittsburgh was flying home to Baltimore in the evening and decided to go on autopilot so he could relax. When he woke up he was far out over the Atlantic. After calling New York Center and explaining his plight, he was vectored toward land,

Wires, shown here glinting in the sun, were invisible at night when the pilot made his shallow final approach at Searchlight, Nev.

but ran out of fuel and crashed at sea, never to be found.

The off-airport crash of a cargo-carrying airplane near Bedford, Mass., which occurred on July 19, 1976, is another good example. The pilot, 29 years old and in excellent health, was instrument rated with an ATP certificate and over 1,800 hours in his logbook. Based at Hanscom Field, approximately 20 miles west of Boston, he was regularly engaged in flying night cargo along the New England seaboard between Hartford, Conn., and Boston. On the day preceding the accident the pilot reported for duty at 4:00 p.m. and remained in the office until 10:00 p.m. Then he completed two round trips between Boston and Hartford, and made his final departure from Logan Airport at 3:31 a.m. EST, bound for his home base.

Local weather conditions at this time were described by the Weather Service as: Sky conditions clear; wind from 240 degrees at 5 knots; visibility 15 miles; temperature 65 degrees; dew point 61 degrees and altimeter setting 2984.

Boston departure control gave the air taxi pilot a vector for the short 20 mile hop to Bedford and advised him to contact the tower as to when they could turn off the runway lights at Hanscom Field (after midnight the field lighting is controlled by the Boston tower). The tower at Hanscom is closed at 11:00 p.m.

Fourteen minutes later a truck driver on Route 4 near Bedford saw an aircraft "explode" as it crashed into a field approximately one and one-half miles east of the airport. The driver pulled over to a nearby house and called police. The wreckage was located in the backyard of another residence, 8,150 feet from the approach end of runway 29, with the fuselage essentially lined up with the runway. Treetops had been sheared off for several hundred feet behind the point of impact, and the aircraft was demolished, and partially burned. The pilot was killed on impact.

The runway lights were reported to be on at the time of the accident, as well as the VASI (Visual Approach Slope Indicator) lights. The approach is preceded by 1,000 feet of cleared area. Although statements of some of the witnesses suggested unusual noises were heard from the engine, the NTSB investigation failed to disclose any mechanical failure or pilot disqualification that would have contributed to the crash. It was ascertained that the fire in the wing and cabin area broke out after impact, and there was no in-flight fire. The probable cause was officially left open—"Undetermined."

Pilots familiar with Hanscom consider it unlikely that an experienced airman could have misjudged his approach to the extent of landing a mile and a half short. In this case the pilot had been on duty nearly 12 hours, he had flown two night missions, and he was returning *alone* at nearly 4:00 a.m. on a

Photo series shows how desert terrain details, which are clearly visible at sunset, disappear as darkness sets in. From the top: Sunset; 30 minutes later; sunset plus one hour.

dark night to an uncontrolled airport, when the accident occurred. There was no one to talk to on the radio, and most of the residential lights beneath him were off. He may have allowed his eyes to close briefly. No one will ever know.

The question—Is one more likely to have an accident when flying at night?—cannot be answered on the basis of statistical evidence, because the latter is incomplete. We know that about one-tenth of all general aviation accidents take place at night, and common observation suggests that less than ten percent of the flying is done after dark. But it would be erroneous to infer that night flying is dangerous. Still, it is important to realize that the conditions of night flight are *different* from daytime flying, and to prepare yourself to cope with them before setting out after dark. The revised (1973) FAA airman certification rules, FAR Part 61, require at least three hours of night flying instruction, including ten takeoffs and landings, for an unrestricted private pilot certificate. Although the regulation is not retroactive, pilots who earned their certificate prior to the new ruling and have little night flying experience are well advised to take the training.

The loss of visual reference in the night flying environment may be compensated for in various ways, all of which contribute to better airmanship:

• **More extensive flight planning.** Since you may have to make a decision about the terrain below you on the basis of what you know about it, rather than from what you can see, you will want to do your preflight planning conscientiously, plotting out the presence of every peak, tower, cable, barn, fence, etc. that lies under your flight path. Assume a pitch dark night—even if there is a moon it could be obscured later by a cloud, or down behind the horizon when you need it. Spot all possible emergency fields in terms of distance or time from departure. Try to land at airports with VASI lights and at times when the runways will be lighted—many airports are curtailing lighted hours to save energy. Double your fuel reserve—you wouldn't believe how much time can be lost wandering around in the dark, or how easy it is to get off course when you have no visual clues.

• **Be sharp on your flying technique.** If you tend to be sloppy on the controls, you will be much more so at night, and a stall in the dark is something to reckon with. If you do not have an instrument rating, get enough training on the instruments so that you can control and maneuver the aircraft dependably without visual reference to the ground, or the horizon. You may never need this much skill during a night flight, but if you do you will need it all at once. Some night flights have terminated shortly after takeoff, when the pilot lost sight of the horizon during climbout, was unable to go on instruments immediately, and became disoriented.

• **Visibility.** Check out your ability to read your instrument panel before you get airborne in the dark, and get used to locating knobs, levers and switches by feel alone. The cockpit light level is usually kept low, in order to facilitate looking out at night, but this makes it more difficult for the eye to focus on small objects or print. Study your charts in advance—they are hard to see at night, under dim illumination, especially for those who are experiencing some early deterioration of near vision that will eventually require them to use reading glasses. If you own glasses for near vision, you should have them with you at night, even though you are not required to wear them.

• **Lights.** Make certain that all internal and external lights are working properly—including your landing lights. You may be *planning* to come down on 10,000 feet of lighted runway, but you might have to settle for a cow pasture. A flashlight in good working order will help you read your charts and is a necessity should electrical power fail.

• **Communications.** If you are in the habit of occasionally flying during the day with a faulty radio, think carefully before flying with it at night. In the dark the radios are your lifeline. Incidentally, distance measuring equipment (DME) and the automatic direction finder (ADF) are a big help at night. DME tells you your slant range distance from a VORTAC (some also read out your groundspeed) and ADF lets you home in on a commercial radio station at a town that has no aviation NAVAID (assuming the station operates at night). If you have any problem with your radios, land at the nearest airport.

• **Alertness.** Stop flying before you get tired. Recognize that flying can be fatiguing to the eyes, that many persons lose some visual acuity when tired, or at altitude, or in the presence of tobacco smoke. Avoid if possible flying alone at night; if you have no companion, make it a point to converse with ground facilities. Take along a thermos of coffee, or some chocolate bars if these help keep your energy up. Never guess or be casual about your position; if you have any doubts ask for assistance from an FSS.

You will find that night flying, when done properly, has its own advantages. The low frequency radio reception is usually "cleaner" (more readily available and freer from static) and distance reception is better, but watch for spurious "night effect" signals. There is less traffic, and what there is is more conspicuous, with the use of anti-collision lights. There is often less turbulence, both aloft and near the ground.

Like the IFR ticket, night flying capability gives you more freedom to get up and go when you please. But it also increases the penalty for carelessness. ■

The air taxi pilot who crashed short of the runway at Hanscom Field, Mass. was completing the last of several cargo flights that night. Repeated night flights apparently are more fatiguing than similar flights conducted during the daytime.

The Pilot's Party Line

FLIGHT WATCH STATIONS
AND COMMUNICATIONS OUTLETS

(via night letter)

BORDER CITY MARYLAND FEBRUARY 26 7:00 PM WILLIAM PAPPY JONES 1201 MAIN STREET CHARLOTTESVILLE VIRGINIA STOP SORRY TO BOTHER YOU PAPPY BUT THIS IS AN EMERGENCY AND I COULD NOT GET YOU BY PHONE STOP I AM STUCK OVERNIGHT IN BORDER CITY MARYLAND STOP THE AIRPLANE IS AT AN UNATTENDED AIRSTRIP STOP SUBZERO WEATHER IS EXPECTED IN THE MORNING AND MY CHANCES OF GETTING STARTED WITHOUT PREHEAT ARE ZILCH STOP LIFE AND DEATH MATTER THAT I GET HOME TONIGHT STOP PLEASE PHONE ME HERE AT GRANDVIEW HOTEL WHEN YOU GET THIS AND ADVISE HOW SOON YOU CAN PICK ME UP IN YOUR PLANE STOP I WILL PAY ALL EXPENSES AND EXPLAIN LATER STOP CHARLES POTTER III

(via telegram)

BORDER CITY MARYLAND FEBRUARY 26 10:05 PM WILLIAM JONES 1202 MAIN STREET CHARLOTTSVILLE VIRGINIA STOP DISREGARD EARLIER MESSAGE STOP GOT RIDE WITH TRUCK DRIVER STOP EXPLAIN LATER STOP CHARLES

(Via Mailgram)
Fredericksburg, February 27

Dear Pappy:

In case my telegrams were a little confusing, I want to explain that when I got weathered in Sunday afternoon I was on my way back from a Fly-In at Pottstown, Pa. Not my fault, either, because I got a complete preflight briefing before I left that morning. It was supposed to be good VFR all day, no precipitation forecast, and I and the pilots of the two other airplanes that flew from Fredericksburg had a fine trip up. The trip home was another story.

I left about 2:00 p.m., an hour before the other guys because the wife had company coming for supper. When I took off there were a few scattered clouds, fair weather stuff I thought. Around the Maryland border, though, the clouds were thicker and I had to get down to 1,500 feet to stay under them. I tried calling the Harrisburg FSS to see what was with the weather, but I couldn't get them. Then I tried Martinsburg and Baltimore and Washington FSS and couldn't get any of them. I was flying along hoping it would improve when I almost ran into a snow shower. I never saw snow from the air before—it took me a while to realize what it was—but when I did it really scared me. My one seventy two is not equipped for snow and ice and neither am I! (Never mind about why I haven't got my IFR ticket yet—I'm working on it.)

I did a VERY quick 180 turn and headed back toward the lightest part of the sky. I was trying to decide what to do, when I saw this little country airport, a gravel strip about 2,500 feet,

right under my nose. Well, I set it down, and took a deep breath.

I figured I'd be able to phone—long distance if necessary—to find out about the weather situation, but the airport was completely deserted and there wasn't a house in sight—or a phone. The little shack near the pumps was all boarded up. I was considering trying to fly somewhere else when another snowshower went through and although it only lasted a couple of minutes I was worried there might be a whole lot more of that white stuff on the way.

After a while it seemed a little lighter and I took off and circled the airport, but upstairs it looked gray in all directions and I came back down, figuring to wait it out. I was still dozing in the cockpit when it began to get dark. I wasn't even sure where I was at the time. I knew I'd been tracking in to Westminster on a southwesterly heading, but I didn't have any idea how far out I was.

I hiked up to the road, hitched a ride to town, and called my wife. First she was relieved to hear from me—she'd been real worried. But when she found out where I was, boy was she mad! Seems like Border City has a slightly unsavory reputation which I swear I didn't know about. To make matters worse, she tells me both my friends in the other airplanes made it home okay. One of my "pals" told her there were just a few scattered snowshowers that moved in from the Alleghenies. With a little help from something called EE-FUSS (what the heck is that?) he managed to stay clear of them.

So she was kind of upset, you see. Seems that little dinner party she had cooked up for Sunday night was to celerbate our 18th wedding anniversary—which actually falls on Monday—and under the circumstances my absence was noticeable. I got the word that if I didn't get home before the guests left I might as well not come home at all. Period.

I explained to her that the local temperature was down to near zero and I'd never get that one seventy two of mine started in that kind of weather without preheating, even if it was safe to fly, which I wasn't sure of. She indicated that was my *problem and terminated the conversation, abruptly. That's when I sent you the night letter asking for help. You can see that it practically was a life and death matter, as I said. You've met the little lady.*

Well, I checked into the hotel and got some supper, and then I ran into this truck driver who was heading south on 95, and he offered me a ride. That's when I sent the second telegram. The hotel obligingly cancelled my room registration and I got home about 2:00 a.m.—just as the last guest was in the driveway. So I got a sort of half-pardon, conditional, as I understood it, on my getting rid of the airplane. But she'll get over that—I hope. This afternoon another pilot is flying me up to fetch my bird home.

Sure hope you didn't get inconvenienced any. You always told me its better to be a live "chicken" pilot than a dead duck.

As ever,
Charles

P.S. Got any idea what they meant by EE-FUSS?
P.P.S. Is it true what they say about Border City?

Charlottesville, February 28

Dear Fowled Flyer:

There is a difference between being chicken-smart and just plain chicken-brained. Sure, there are a lot of worse things than an unscheduled weather stop. The best pilots make them. I'm glad to see that some of my teaching stuck in your mind. However, some seems to have leaked out, also. Like keeping informed, for a starter, on what kind of weather service is being offered to pilots.

EFAS—EE-FUSS to you—which stands for the new Enroute Flight Advisory Service is just what you need to deal with unforecast weather changes, and it's available just about everywhere in the air on 122.0. If you hadn't overlooked it you wouldn't be sleeping on that downstair couch.

About those telegrams—we get a wire down here about once every 11 years, and it has to be something heavy. Ever hear about the kid who cried wolf?

Grow up, friend.

Pappy

Fredericksburg, March 1

Pappy:

I said I was sorry. Listen, there's so much alphabet soup dished out from Washington these days I guess I sometimes turn it off automatically. I figured EFAS was just another bit of exotic and expensive automation to make the job easier for hired help. Like MSAW or AWANS or ATCRBS or soft-shelled CRBS or any of the gibberish the Feds expect you to memorize. Don't tell me you've gone computer-addict on me?

Kid-on-the-couch

Charlottesville, March 5

Dear Kid:

Believe me, I share your feeling generally about acronyms and automation, but not about EFAS. I prefer the term "Flight Watch" which a lot of flight service station people use and it describes the service better anyway. Flight Watch is like a pilot's party line about weather—it's real folksy, as they say down here. If you had talked to Flight Watch Sunday you probably would have learned how to get around those showers with no trouble.

Pappy

Fredericksburg, March 15

Pappy:

Your folksy humor is warping my image of you as a Serious Flight Instructor. Suppose you stop shuffling and tell me just what the difference is between an ordinary flight service station and a Flight Watch station, and why. Just give me the facts, man.

Charles

Charlottesville, March 20

Dear Charles the III:

Flight Watch is a special en route weather briefing service provided by 44 of the largest flight service stations, between the hours of 6:00 a.m. and 10:00 p.m. on a universal frequency (122.0) by an FAA specialist trained in meteorology, who is provided with up-to-the-minute weather data from satellite reports, radar, and pilot reports. There you have it in a nutshell, son, so get cracking.

Incidentally I've got through to Flight Watch lots of times as low as 2,000 feet or less. I think that's because each Flight Watch FSS has maybe four or five remoted transceivers. And the frequency's not so busy as the other FSS freqs because it's only intended for enroute updating—not for complete briefing, filing a flightplan, random sequence reports or that stuff. You don't have

to remember what EFAS stands for, and if you don't know the name of the nearest station you can just say, "Flight Watch, this is so and so, I'm at this altitude and that position in this kind of plane, I see this and that in front of me, I want to go such and where, and how can I get there?" They'll tell you. And they'll appreciate you telling them how it works out, because pilot reports are the only sure way they know what's happening, weatherwise, at a lot of remote points, especially in the mountains. They got some long range radar and are getting satellite photos and talking computers which give them the big picture, but nothing is as sure-fire and timely as a guy in a beat-up *Bellanca* telling you he just got hit on the head by a hailstone—right?

Pappy

Fredericksburg, March 23

Hey, Pappy!

I think you've got something there. I flew down to Lynchburg yesterday and in that valley where I always have trouble reaching somebody on the radio I called "Flight Watch" and guess who came right on? Washington! I was more than 100 miles downstream, but they came up loud and clear—they have an outlet near Lynchburg, I guess. While I was talking to them, another pilot came on the frequency and told us about some turbulence he'd ridden out west of the airport and I gave that a wide berth and had no trouble. I see what you mean by calling it a party line. Instead of fighting guys for the frequency, you listen, ask for what you need, and throw something useful in the kitty.

One question: What would happen if I used 122.0 to file from the air, and got a weather update at the same time?

Chortlin' Chuck

Charlottesville, March 26

Dear C.C.

What would happen to Flight Watch if you and your pals tried using it for other purposes is the same thing that happens to any system when it gets abused—it shuts down. Listen, get a complete briefing on the ground, hopefully in person or else by phone, and do your flight plan filing there too. Flight Watch is for the guy who has done all this, and still finds himself in a ticklish situation (as you did up in Pennsylvania) and needs a quick update. You know what it's like when you're up there and suddenly the clouds are piling around you or the plane is shaking like crazy and someone in back is getting ready to be sick—and you're waiting to break through on the frequency. We general aviation pilots have a good thing going here, so let's protect it, or sure as death it'll be replaced by some God-awful computer.

Pappy

Fredericksburg, April 2

Dear Pappy:

I think it may be too late already, the big boys have moved in on us. I was flying up the Shenandoah Valley the other day and when I tried to raise Flight Watch on the radio, every station in every dirction was filled with chatter from some high-flying jet—and nothing I was interested in either. What goes here? I thought you said this service was for general aviation, not those air carrier jockeys.

Charles the Disgruntled

Charlottesville, April 5

Dear C.D.

What I meant was that the general aviation VFR pilot is getting the most benefit from Flight Watch. You know the air carrier boys have company sources of weather updates which we don't, and weather isn't so much of a problem when you go above it. By the way, everything that moves up there without a prop ain't necessarily an air carrier; I do a lot of corporate and cargo jet-hauling myself these days. And I know the problem you're talking about. The higher a plane flies, the broader the range of his radios. And seeing as Flight Watch operates everywhere on the same frequency, when a jet transmits from 33,000 feet you can hear him over half the continent. I was flying co-pilot the other day (you take what you can get in your old age) on a corporate prop-jet and at 19,000 we could hear high-altitude airplanes talking to Memphis, Atlanta, St. Louis, and Charleston Flight Watch stations, all at the same time.

I guess nobody expected the jet boys to get into this thing, but nobody wants to discourage them either because their pilot reports are just about the only way we have of knowing certain things, like where the clouds top out, where the icing level is (not where it's supposed to be), high altitude winds aloft, that kind of stuff. But FAA is concerned about all these overlapping transmissions, and they'll come up with some kind of fix—maybe a separate frequency for high altitude, like above 18,000 feet. Meanwhile, just keep the faith. The more pilot reports the Flight Watch guy has stuck up on his board, the more he can tell you about what's happening out there.

One more thing—when you give a report, be sure and tell the man what kind of plane you have. That makes a big difference when you're reporting turbulence.

Pappy

Fredericksburg, April 18

Dear Old Long-in-the-Tooth:

I'd love to see a crusty old eagle like you in the co-pilot's seat taking orders from some young whippersnapper on the left. Serves you right for taking the trouble to turn out such topnotch students.

Anyway I've got to admit once more you are RIGHT, and I was overlooking a good bet in what my wife still calls "Ee-Fuss." It not only helps me get home in time to avoid cold potatoes and chilly stares, but it also converted the little lady of the house into a big aviation buff. Tell you how it happened.

She was planning to go by train to visit her mother in Parkersburg last week, but they had that derailment you probably heard about and so she was edgy about riding the rails. Somewhat to my surprise, I was able to talk her into letting me fly her over in the one seventy two. Well, there was nothing to the flight either way, but she was pretty tensed up most of the time and complained about the noise. We were tooling along on our way back near Upperville, and just for fun I had 122.0 tuned in. We heard a TWA heavy ask Washington Flight Watch if they knew anything about an overcast over the Blue Ridge Mountains west of Dulles Airport—he was over Winchester and I believe he was getting set up for landing on Runway 12. I handed my wife the microphone and told her to tell them we had just crossed over from Winchester at 3,500 in the clear. She managed to get the words out somehow, and got a big thank you directly from the TWA captain. Now all she talks about to her friends is how she steered that big jumbo jet into the airport, and she can't wait for another chance to have her say on the radio. Fact is, she wants me to schedule her for all the fly-ins from now on—including next year's Pottstown affair. What do you think of that, old timer?

Smilin' Chuck

Charlottesville, April 11

Dear Smiling Charles:

What I think is, if you take your wife along to Pottstown, you'd better not stop off at Border City again on the way back. Referring back to the second postscript on your first letter (my God, I'm beginning to sound like a bureaucrat!), from what I hear it's a naughty-naughty place. But then you probably know all about that, you old fraud. Happy flying,

Pappy

Famous
FLYERS

The Whitehead Legend

A Powered Flight over Long Island in 1901?

In 1917, as the United States prepared to enter World War I, a company of soldiers took over an abandoned hangar at Hempsted Plains, on New York's Long Island. In so doing they evicted a nondescript vagrant they found sleeping under the wing of what appeared to be a kind of airplane. He trudged away without a word, dragging behind him what might have been a sister ship to the first airplane ever to accomplish a manned flight powered by an internal combustion engine.

Both the man and the plane dropped out of sight, the former proceeding to a pauper's grave, the latter to an historical limbo. But in 1964 long forgotten Gustave Whitehead was proclaimed by many to be the first to fly a practical, controllable aircraft, in 1901. Such claims have scarcely dimmed the lustre of the Wright brothers accomplishments at Kitty Hawk in 1903, but the Whitehead story deserves at least a footnote in the annuals of flight.

This strange man was neither scientist nor engineer, neither humanist nor entrepreneur. He was blunt to the point of irritability; he pursued a single idea all his life with a passion that eliminated all social, moral or practical concerns; his zeal was self-contained and gave off few sparks of interest. He seemed to shuffle his way through life, a Chaplinesque figure in comparison with the grandiloquent and heroic pioneers of aviation. But somehow the legend of his accomplishment persists.

He was born Gustav Alvin Weisskopf on January 1, 1874, in the little Bavarian town of Leutershausen. Growing up in the era of Otto Lilienthal (the celebrated Birdman of Berlin) and other famous glider experimenters, he became obsessed from an early age with the idea of flying. Nicknamed "The Little Flyer" by his classmates, he spent more time imitating birds, and trying to soar from barn roofs, than with his schoolbooks.

Both of his parents died when he was 13, leaving him without friends or relatives and no prospects. He worked his way to Brazil as a seaman and eventually, in 1892, emigrated to Boston, arriving penniless, jobless, untrained for any trade on shore.

But he had picked up a certain practical skill with his hands aboard the ships he had worked, and apparently he had gleaned some knowledge of glider mechanics by corresponding with Lilienthal (before the latter crashed to his death in 1896). Consequently he was able to impress Samuel Cabot and the Boston Aeronautical Society with his ability (as an emissary of the Master Bird-

man) to build a "flying machine" with their backing. Patterned after Lilienthal's latter day biplanes, the "Boston Flyer" had hand-powered propellers and movable wings. But the machine failed to budge off the ground in its maiden effort near Milton, Mass., in 1896, leaving the Society disenchanted and Whitehead (his name had been translated into English) without a patron. He shrugged and left town.

In New York he found work as a demonstrator of kites for a toy manufacturer, being required to keep as many as 15 kites in the air at the same time. The following year he drifted up to Buffalo where he married Louise Tuba on November 24, 1897. His poor command of English and his imperious manner discouraged friends as well as employers, and he moved from one job to another with no apparent pattern. Soon after his daughter Rose was born he moved to Johnstown, Pa., and later to Pittsburgh where he worked in coal mines.

In retrospect it seems possible that his continual job switching was not without a motive, that perhaps he was deliberately acquiring, through experience, knowledge of matters that were important to his ever-present dream of constucting an aircraft. He may have been interested in coal as a fuel for the steam engine he built in 1897 to power his next aircraft—a two-man machine) (he needed a boiler stoker) which he built and flew in the spring of 1899. The airplane is said to have risen to a height of 25 feet before crashing out of control into a three-story building. The story was corroborated (orally) by the stoker, Louis Daravich, who spent three weeks in the hospital recovering from his injuries. Whitehead, who was not injured, left town at the suggestion of police, moving on to Bridgeport, Conn., where he found work as a coal truck driver.

Joined later by Daravich and a few other devotees, Whitehead continued to build flying machines, working at night in his basement after a day's toil on the truck. Over the next two years he completed and flew, according to his own account, 18 more aircraft, including several gliders—one large enough to permit him to take up a passenger. In 1900 he took a night watchman's job, to free him during the daylight hours for his "real" work, and in the following Spring he completed his "No. 21." With a 16 foot fuselage and a 35 foot wingspan, the craft was powered by two 20 hp engines burning acetylene gas.

The aircraft was tested along the beaches of Fairfield, Conn., near Bridgeport, and finally launched, with Whitehead at the controls, from a point known as Tunxis Hill. According to the builder-pilot (as recorded in his letter to *The American Inventor*) No. 21 accomplished four flights on this day, including one covering a mile and a half. Witnesses included writer Richard Howell who, in a full page feature appearing in the August 19, 1901 issue of the Bridgeport *Sunday Herald* described a flight of one-half mile distance, rising to an elevation of about 50 feet. Howell's article proclaimed that "a local Bavarian immigrant, of meager schooling and less money, had successfully solved the riddle of flight."

This statement was echoed on the following day in the *New York Herald* but did not bring the scientific world rushing to Whitehead's door. At this exciting turn-of-the-century era, reports of aeronautical triumphs were crackling over the telegraph lines from all points of the globe. Most of these proved to be founded on rumor or in some cases engendered by outright charlatans. In the absence of irrefutable scientific proof (such as an inflight photo), the claims were generally forgotten within a few days—as was the case with Whitehead's No. 21. Whitehead had no inflight photos to offer, no instrument recordings, no official observers

—only his own word and that of various witnesses. One such witness, Junius Harworth, wrote that No. 21 "was . . . constructed entirely by Whitehead, with my assistance . . . a monoplane having a four cylinder, two cycle motor located forward, and using two propellers. . . . The body of the machine was constructed of pine, spruce and bamboo, reinforced with Shelby steel tubing and piano wires. The wing coverings were of Japanese silk, varnished and fastened to the bamboo struts with white tape. . . . The entire machine weighed approximately 800 lbs.

On January 17, 1902, Whitehead launched his "No. 22," a similar aircraft in design, but with a Diesel-type, kerosene-fueled engine and aluminum sheathing. In a letter to the *American Inventor*, Whitehead wrote that ". . . it was intended to fly only short distances, but the machine behaved so well that at the first trial it covered nearly two miles over the water of Long Island Sound, and settled in the water without mishap (it was an amphibian). . . . On the second trial . . . with myself on board it sailed across Long Island Sound. The machine kept on (course) steadily in crossing the wind (sic) at a height of about 200 feet, when it came into my mind to try steering around in a circle. As soon as I turned the rudder and drove one propeller faster than the other, the machine turned round a bend and flew with the wind at a frightful speed, but turned steadily around until I saw the starting place in the distance. I continued to turn but when near the land again, I slowed up the propellers and sank gently down on an even keel into the water, she readily floated like a boat. . . ."

"The length of flight on the first was about two miles, and the second (across Long Island Sound) about seven miles . . . I consider the trip quite a success. . . . To my knowledge it is the first of its kind. . . ."

The air-cooled engine (weight unknown) which the inventor built himself delivered 40 hp at 600 rpm, driving two six-foot propellers, according to the design. A tubular steel mast and wooden bowsprit served as a steadying framework for the wire stiffeners. The batlike wings were pure Lilienthal, but Whitehead added his own touches, including a fish-shaped 16′ fuselage, a 12′ tail, and a stabilizer coupled to a kind of primitive automatic pilot, for sustained level flight. The landing gear consisted of four wheels, the two forward wheels being driven directly off the engine at the start of the 60′ takeoff roll, achieving a "fearful speed," at which point the folded-up wings were forcibly extended by a spring, the propellers engaged by the engine, and flight immediately begun.

The Sound crossing was witnessed by Whitehead's mechanic, Anton Pruckner, who in a sworn statement said that he had also flown with Whitehead in an earlier flight.

Whitehead provided the magazine with photographs of his airplane (at rest), drawings, plans and sketches of flight paths followed. He concluded with the interesting comment: "To describe the feeling of flight is almost impossible for, in fact, a man is more frightened than anything else."

In a later letter Whitehead invited the magazine editor to be present at the next series of flights in No. 22, during the following Spring, but there is no record of this event taking place. The ever-impatient inventor was searching for a design that would accomplish more nearly-vertical ascents and never stayed very long with one model. All in all he appears to have built 50 distinct aircraft of varying design—including one helicopter with 60 rotor blades—and 30 aircraft engines, a number of which were sold to other builders. There is no record of other successful Whitehead flights, although the Witteman biplane, which flew in 1910, was powered by a Whitehead gasoline-powered engine.

Apart from this there is no historical indication that Whitehead participated in the enormous leap forward of aviation in the first decade of the 20th century. Without question he continued to pursue his own vision with iron determination . . . "I have

taken up the Aeroplane and will stick to it until I have succeeded completely or expire in the attempt . . ." His daughter Rose commented later that ninety-five cents of every dollar her father earned went into aircraft building—so much so that the only time they ever had meat on the table was in summer when she could earn extra cash from picking berries. At the time of his death, in 1927, the family did not have enough money to buy a gravestone.

A few years later, a Maryland writer named Stella Randolph who became interested in this little-known inventor for some reason of her own, began digging into his life history, soliciting letters, papers, sketches, plans, photographs and other memorabilia from the Whitehead family. Her findings resulted in the publication of two books: *The Lost Flights of Gustave Whitehead* (1937) and *Before The Wrights Flew* (1964). Although her work was rejected by leading American aeronautical history societies, Connecticut historians took up the challenge and rallied to the support of Whitehead, with the result that in 1966 he was designated the *Father of Aviation in Connecticut*, and an appropriate headstone was placed at his grave.

As to the agonizing question—Did Whitehead actually fly a powered aircraft in 1901 or 1902?—it will probably remain unanswered forever. Whitehead proponents believe their man should be credited with achieving (1) the first high flight, (2) the first long flight, (3) the first closed circuit flight, (4) the first flight over and landing on water, (5) the first flight with a passenger (Pruckner), (6) and the first flight with an internal combustion engine.

The case against their claims rests primarily on the *absence of any photographic evidence of flight*. The argument has also been made that Whitehead was unlearned, that he was simply a tinkerer, that technically, his designs could not have got off the ground as indicated. In reply Whitehead supporters point out his single-minded lifetime devotion to aviation, the success of his engines, the proven aerodynamic qualities of the Lilienthal-typeof glider, etc, etc.

In November of 1966 Mr. Paul Garbor of the Smithsonian Air and Space Museum in Washington, D.C., journeyed to Connecticut to interview Anton Prukner. In his 80s at this time but the former mechanic's weakened condition precluded exhaustive questioning, and he died a few days later.

Consequently the Whitehead legend remains just that. There seems to be no reason for him to claim falsely that he had flown across Long Island Sound unless he were an outright charlatan (but he neither sought nor gained any renumeration). Perhaps, like others, he had been carried away by his enthusiasm to overestimate his accomplishment. Neither of these alternatives accords with the character of this man, who all his life had marched to the inflexible beat of an inner drum. ■

BRIEFS

PILOTS IN A PINCH should bear in mind that telling the whole truth is a must if they are to be helped by air traffic control specialists on the ground. Telling only half the story almost caused tragic consequences recently when a pilot called the Zanesville Flight Service Station to ask about field conditions. When the specialist reported that the airport was closed due to snow, and that snow removal was in progress, he had no way of knowing the airplane was almost out of fuel. Minutes later when the craft passed over the station and they learned it had less than ten minutes of fuel, they directed the three snowplows to vacate the runway, and gave the pilot the signal to land. The landing was successful but the aircraft had to be towed off the runway because the tanks were dry. In January 249 pilots were assisted to safe landings by air traffic control. Of these, 112 were lost, 39 were low on fuel, 80 were caught in weather and 58 had airplane trouble.

AIRPORT-LAND USE COMPATIBILITY. Persons involved in planning land use around existing or future airports will be interested in a new FAA Advisory Circular on the subject. The book is designed to aid airport sponsors, local government officials and airport and urban planners by offering techniques and ideas for achieving long-term compatibility between airports and their environs. Also included are general guidelines for developing noise control plans as encouraged by the DOT Aviation Noise Abatement Policy. "Airport-Land Use Compatibility Planning" (AC 150/5050-6) is available from Superintendent of Documents, GPO Washington, D.C. 20402 for $2.50.

BUGS IN THE BATTERY. Most airplane owners are well aware of the need for regular battery-inspection, but some are apparently overlooking the checking of battery vents to see that they are not clogged. A rash of clogged vents have recently been reported to FAA. In one case an insect nest clogged the venting line of a battery that was installed in the tail section of the aircraft. Corrosion was present in the surrounding area, due to venting of the battery inside the tail section. A clogged vent in a battery installed in the cockpit (under the seat) could be particularly hazardous, due to hydrogen build-up in a closed area. Regardless of location, battery venting lines should be checked regularly.

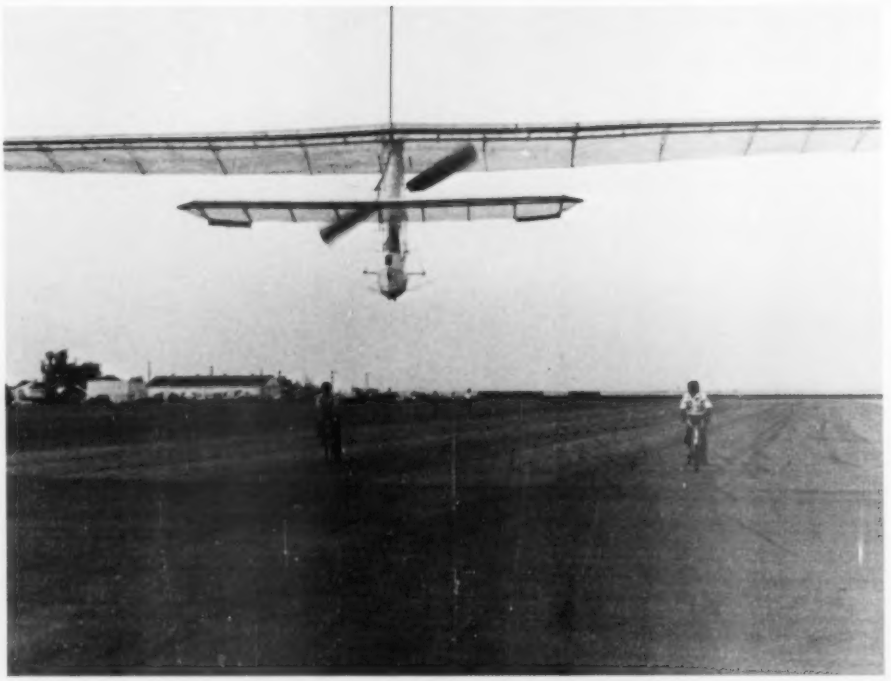
SELF-DESTRUCTING SIGNALS. Pilots and radio technicians should be aware that under certain circumstances dual transceivers in an aircraft can interfere with each other's operation and result in garbled—or no—radio reception. The situation—which occurs rarely but can have serious consequences—comes about when the audio output from one transceiver is 180 degrees out of phase with the other transceiver, and they are fed into a common speaker device. If both radios are tuned to the same frequency they may then serve to cancel each other out. Pilots, who suspect such a problem may exist with their radios, should consult a qualified electronic technician.

New Prize Will Challenge U.S. Lead in Man-Powered Flight

A new incentive for the development of man-powered flight has been announced by London Industrialist Henry Kremer, who is offering 100,000 British pounds (about $165,000) for the first crossing of the English Channel in an aircraft driven solely by human energy. The channel is approximately 23 miles wide between Dover and Calais.

The first major Kremer prize of 50,000 pounds was won by Paul B. MacCready, an aeronautical engineer from Pasadena, Cal., whose team spent a year and a half building a 70 lb. monoplane with a 96' wing. On August 23, 1977, his *Gossamer Condor* completed the required course: a figure eight around two pylons half a mile apart, with a ten foot obstacle to be cleared at start and finish. The *Condor* is now in the Air and Space Museum in Washington, D.C.

Specifications and applications for the channel crossing competition may be obtained from The Secretary, Royal Aeronautical Society, 4 Hamilton Place, London, England, WIZ OBQ.



Unbalanced Loading Cited in New Cumberland Crash

Loading an airplane in a tail-heavy manner can affect the craft's stability so seriously that it may be difficult or impossible to recover from a stall or spin.

This is one of the messages carried in FAA's newly revised Weight and Balance Handbook for pilots, and the point is underscored by the recent National Transportation Safety Board finding that improper loading (tail heaviness) was the probable cause of a light twin airplane crash that killed two experienced pilots (each with an instructor rating) and six passengers, as well as one person on the ground. The state operated airplane crashed shortly after takeoff at New Cumberland, Pa. Using all possible combinations of loading to calculate the center of gravity of the flight, the Safety Board estimated the C. G. to be between 2.09 and 3.2 inches aft of the rear limit. "This imbalance," said the Board, "led to the pilot's inability to control the longitudinally unstable aircraft during a climbing turn under instrument flight conditions."

The updated publication, "Pilot's Weight and Balance Handbook" (AC 91-23A) covers loading problems faced by general aviation pilots when operating light aircraft, including twin-engine air-taxi types. Copies may be ordered from Superintendent of Documents, GPO, Washington, D.C. 20402, for $2.30 (Stock No. 050-007-00405-2).

BFR CARD

When is your next Biennial Flight Review due? That information can be as close as your wallet if your instructor provides you with one of the handy BFR reminder cards (shown actual size) when you get your flight review. Cards—to be used optionally *in addition to logbook entry*—can be carried with pilot certificates for those who wish "portable" evidence of BFR compliance. Instructors may get cards free from Accident Prevention Specialists at FAA GADOs.

DEPARTMENT OF TRANSPORTATION FEDERAL AVIATION ADMINISTRATION **BIENNIAL FLIGHT REVIEW**	DATE
PILOT	EXPIRATION DATE
TYPE CERTIFICATE/NUMBER	AIRCRAFT FLOWN
INSTRUCTOR	CERTIFICATION NO./ EXPIRATION DATE

FAA Form 8710-5 (6-77)

ELT Rule Changed

Temporary operation of aircraft from which the ELT has been removed for inspection, repair, modification or replacement will be permitted as a result of the March 16, 1978, amendment to FAR 91.52. (The rule change was preceded by Congressional action which changed the Public Law that originally made the ELT mandatory.)

Since the amendment was adopted without prior public notice, and is intended as interim rulemaking action to enable FAA to gather data on which to base a permanent rule change, interested persons are invited to submit comments. Mail comments before June 14, 1978, to Rules Docket, FAA AGC-24, Washington, D.C. 20591. (Mention FAR 91.52 (f)(10).

AIM Transition Speeded Up

The phasing out of Parts 2 and 3 of the Airman's Information Manual in favor of the new seven-volume Airport/Facility Directory is being accomplished in less time than the year that was previously estimated. As a result, AIM Part 2 will be discontinued after the Spring/Summer 1978 edition. Part 3 ceased publication on March 23, 1978.

Subscribers who are entitled to later editions of Parts 2 and 3 will receive refunds from the Government Printing Office, and are also being mailed instructions and order forms for subscribing to the new Airport/Facility Directory.

• Bahamas Flight Plan

During a recent trip to the Bahamas I had a distressing experience caused by a mix-up in my VFR flight plan, which was filed through Vero Beach for a flight from Fort Pierce, Fla., to Marsh Harbour, Abaco. Unable to reach Nassau radio by air over Marsh Harbour I went to the radio-telephone station after landing and placed a call to the proper authorities in Nassau to cancel my flight plan. I later learned that a U.S. Coast Guard search and rescue mission was initiated for my airplane the next day because I failed to close my flight plan to Walker's Cay which, until then, I'd never even heard of.

I spoke later to a Coast Guard official and learned that the four-letter airport designators (which are used for international flights) for Marsh Harbour and Walker's Cay are very similar and somehow I was listed with the wrong destination. As a result, a costly search and rescue mission was conducted needlessly. Additionally, had we actually gone down, the Coast Guard would have been looking for us in an area 150 miles away.

Does this type of thing happen often? Do you have any suggestions for avoiding such situations in the future?

Lee Donehower
Hooper, Nebraska

We suggest that you check to make certain that the "proper authorities" you spoke to in Nassau were in fact the appropriate office for closing a flight plan to the Bahamas.

We also suggest that Bahamas-bound pilots maintain as much radio contact as possible during the flight, making position reports wherever possible. Note that the very powerful FAA communications system from the Miami International Flight Service Station can be reached from long distances over the Bahamas. Many pilots flying from the states keep one radio tuned to the Miami frequency while flying in the Islands. If you cannot reach Nassau you can often contact Miami. Flight plans can also be closed with Miami FSS, which will relay the message to Nassau.

• A Flying Career

I am a private pilot with aspirations to obtain an air transport rating and fly for one of the airlines. Although I've read of a predicted shortage of qualified airline pilots, I know of no school that boasts of placing pilots after training. Do you have any suggestions?

Also, what is the story if you wear glasses—even though your vision is 20/30 corrected?

Alex Hoffman
Milwaukee, Wis.

FAA does not maintain listings of prospective employers in the aviation industry. However, FAA requirements for an air carrier pilot-in-command include an airline transport certificate and a first-class medical certificate, for which you must have distance vision of at least 20/100 corrected to 20/20. Additionally, each individual airline establishes its own experience, medical and certification prerequisites for pilots.

The requirements of some commercial operators are less stringent. For these reasons we suggest that you contact potential employers directly for their suggestions, and also discuss the matter with some of the pilot schools in which you are interested. For a list of the latter you can write for FAA's "List of Certificated Pilot Schools" (AC 140-2K), free from DOT/FAA Distribution Unit, M-443.1, Washington, D.C. 20590.

• Whiteout on the Desert?

Your January article, "Lost Horizons," which discussed whiteouts was very informative, although at this time I am not personally concerned with this kind of weather condition since I live and fly in the desert area of the Arabian Gulf. However, I believe the same "whiteout" effect may be encountered in desert regions, especially during a sandstorm or hazy conditions. Do you agree?

Enjoy your magazine. Keep up the good work.

Clive A. Makinson-Sanders
Dubai, United Arab Emirates

Blowing sand can provide much the same visibility problems as snow. Additionally, flying through sandstorms can often result in serious damage to the engine and other airplane components. Thank you for your comment.

• Carb Heat and Ice

I recently read an article (in another publication) about carburetor ice, which stated ". . . carb heat can also raise the temperature enough to *cause* icing."

Are there conditions where you can actually cause carburetor ice by using carburetor heat? If so, how do you know when they exist?

David P. Cirka
Manchester, N. H.

Carburetor ice can be caused by the use of carburetor heat when outside air temperatures are extremely low. In very cold air (below 14 degrees F.) ice does not normally form in the carburetor because such air contains little moisture, and whatever amount is present is in the form of crystals which pass through the induction system without any problem. Activating carburetor heat could raise the temperature to the point where ice will form.

The Lycoming "Flyer" warns that use of partial carburetor heat (if the aircraft is not equipped with a carburetor air temperature gauge) can be particularly hazardous in this respect, since a small amount of heat melts the crystals in the air, which refreeze above the venturi when they come in contact with the cold metal of the throttle plate. Lycoming recommends not using carburetor heat below 14 degrees F. and never using partial carb heat unless you have a carburetor air temperature gauge.

FAA GENERAL AVIATION NEWS welcomes comments from our readers. No anonymous letters will be used, but names will be withheld on request. Address: FAA GENERAL AVIATION NEWS, AFS-807, Washington, D.C. 20591.

• November or No?

You recently stated that the requirement for pilots to use the prefix "November" with their aircraft identification has been eliminated. I had the impression that use of the prefix was a Federal Communications Commission (FCC) rule. Has their position been modified?

Operationally, I question that the deletion is a wise one. The aircraft I operate is N2QF. When I do not use the "N" I am sometimes asked by controllers if "2QF" is my whole number. Using the "N" in my call avoids that interchange. Would you comment?

John A. Woodhall, Jr.
Willmar, Minn.

Pilots are no longer required *to include the initial "N" with their call-sign. However, there is nothing in the rules that prohibits use of the "N" if there is a reason for doing so. Generally the aircraft type is more useful to ATC than the "N"* (Sabreliner *4FA).*

The FCC concurs with FAA on allowing the "N" to be dropped during radio transmissions.

INSTRUMENT CORNER

• VOR Checks

I would like to comment on the FAR 91.25 requirement for periodic VOR equipment checks for IFR flight, which I suspect is being violated by some otherwise conscientious and competent pilots. If this is true, I believe it is because of the difficulty in making VOR checks. There are too few VOTs and designated ground checkpoints, so the only practical check is comparing one VOR against the other. This obviously presents a problem for pilots with one VOR, and even with two VORs I like to also check mine with a ground checkpoint and a sectional. Why not make this an approved procedure?

John Kjellman
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Are you aware of the list of "VOR Receiver Check Points" in Part 3 of the Airman's Information Manual? There are 21 pages of approved and tested locations where you can check your VOR reception, including some 440 that can be made from the air using a technique such as you describe. Also listed are about that same number of checkpoints for use on the ground at various airports.

Airborne checkpoints describe identifiable landmarks, such as "yellow water tower," "red and white smokestack," "railroad crossing," "airport control tower," etc. Also given is the altitude to fly over the point and the VOR to be used in making the check, along with the frequency, identification, direction and distance from the station.

(NOTE: If you are now using the new "Airport/Facility Directory" that is being phased in to replace Parts 2 and 3 of AIM, the VOR Receiver Checkpoint list can be found near the back of each of the seven volumes.)

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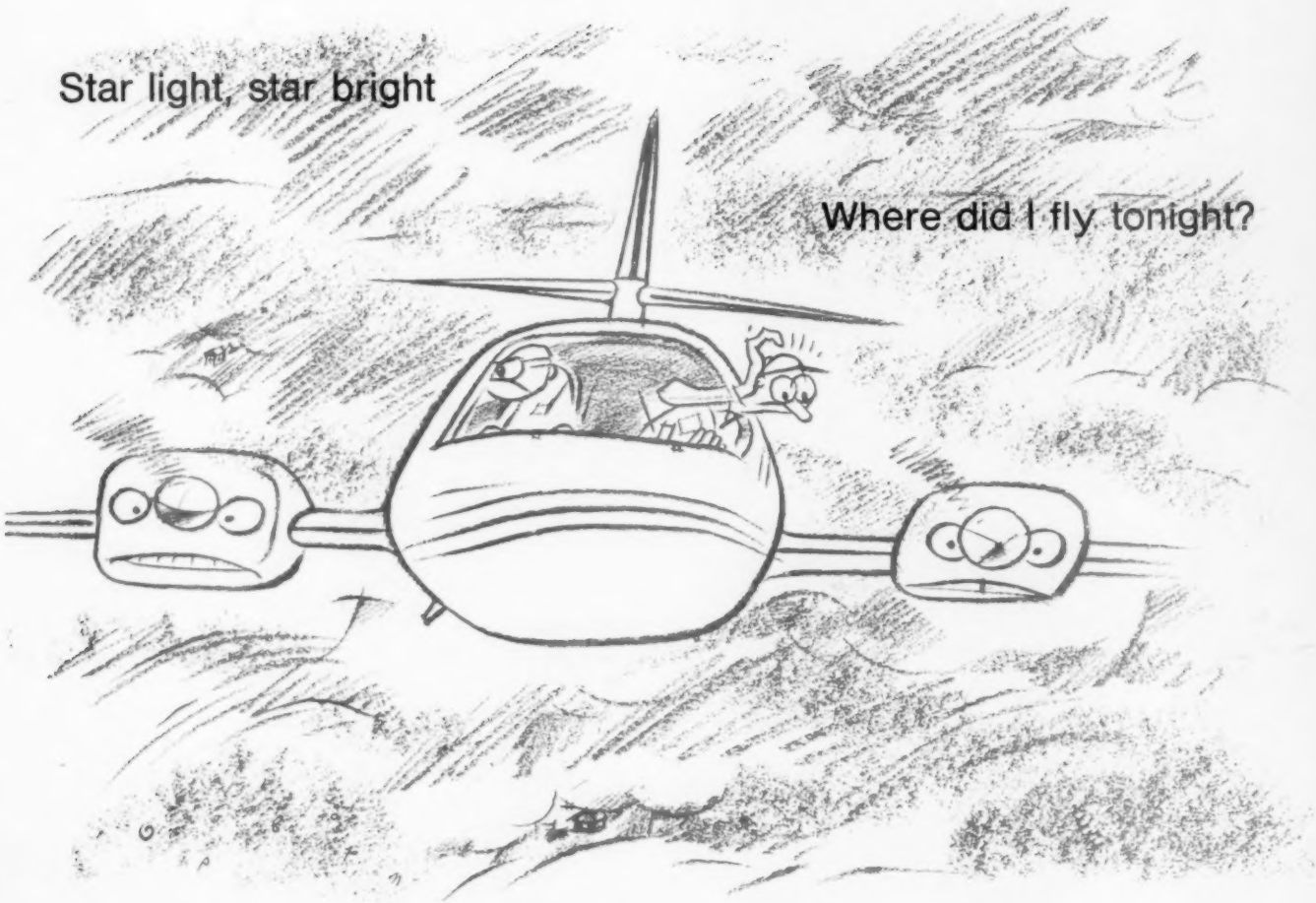
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